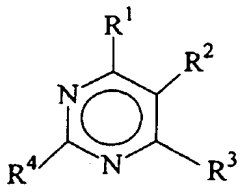
Patent claims

1. An agent for dyeing keratin fibers, comprising

A) at least one pyrimidine derivative of the general formula I



(I)

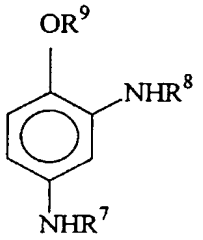
in which R^1, R^2, R^3 and R^4 may be identical or different and are hydrogen, OH, NH_2 or a group NR^5R^6, in which R^5 and R^6 may be identical or different and are C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl having a primary and/or secondary hydroxyl group,

where two of the radicals R^1, R^2, R^3 or R^4 together can form an optionally substituted 5- and 6-membered heterocycle containing one or two nitrogen and/or oxygen atom(s) in the molecule,

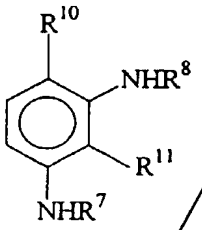
with the proviso that at least two of the radicals R^1, R^2, R^3 or R^4 are a group NH_2 and/or NR^5R^6,

B) at least one compound chosen from the group consisting of

(a) m-phenylene derivatives of the formulae II and III

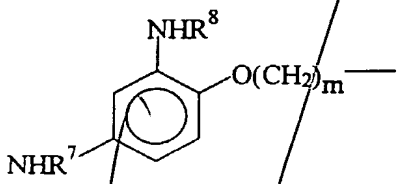


(II)



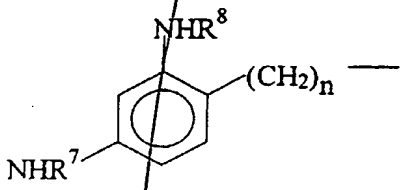
(III)

in which R^7 and R^8 may be identical or different and are hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,
R^9 is C_1-C_4-hydroxyalkyl or a radical of the general formula IV



(IV)

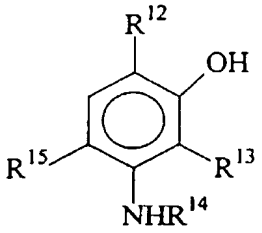
in which R^7 and R^8 are as defined above and m is an integer from 1 to 4,
R^{10} is hydrogen or a radical of the general formula V



(V)

in which R^7 and R^8 are as defined above and n is an integer from 1 to 4,
R^{11} is hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

(b) m-aminophenol derivatives

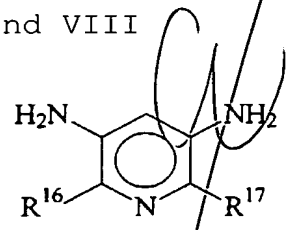


(VI)

in which R^{12} is hydrogen or C_1-C_4-alkyl,
R^{13} is hydrogen, fluorine, chlorine, OCH_3 or C_1-C_4-alkyl,
R^{14} is hydrogen, C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl or OCF_3,
R^{15} is hydrogen, fluorine, chlorine or OCH_3,

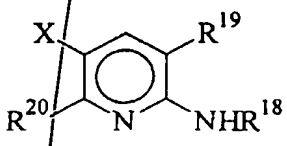
with the provisos that R^{12}, R^{13}, R^{14} and R^{15} are not hydrogen at the same time and that, if R^{12} is methyl, R^{13}, R^{14} and R^{15} are not hydrogen at the same time,

(c) pyridine derivatives of the formulae VII and VIII



(VII)

in which R^{16} and R^{17} may be identical or different and are fluorine, chlorine or $-OCH_3$,



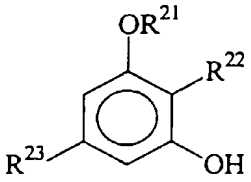
(VIII)

in which R^{18} is hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

R^{19} is OH or NH_2,
R^{20} is hydrogen, C_1-C_4-alkoxy or NH_2,
X is hydrogen or OCH_3,

with the provisos that, if R^{19} is NH_2, R^{18} and R^{20} are not C_1-C_4-alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX

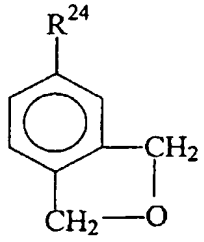


(IX)

in which R^{21}, R^{22} and R^{23} may be identical or different and are hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

with the provisos that R^{21}, R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

(e) methylenedioxybenzene derivatives of the formula X



(X)

in which R^{24} is OH, NH_2 or NHR^{25}, in which R^{25} is C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl, and

(f) 3,4-diaminobenzoic acid.

2. The agent as claimed in claim 1, characterized in that 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-2,5,6-triaminopyrimidine, 2,4,5,6-tetraaminopyrimidine, 5,6-diamino-2,4-dihydroxypyrimidine, 2,4-diamino-5,6-dihydroxypyrimidine, 4-dimethylamino-2,5,6-tetraminopyrimidine and any mixtures thereof are present as pyrimidine derivatives of the formula I.

3. The agent as claimed in claim 1 or 2, characterized in that the pyrimidine derivatives of the formula I are present in an amount of from 0.03 to 65 mmol, in particular from 1 to 40 mmol, based on 100 g of the total dyeing agent.

4. The agent as claimed in any of claims 1 to 3, characterized in that the compounds of component B are chosen from the group 1,3-bis(2,4-diaminophenoxypropane), 1,3-bis(2,4-diaminophenylpropane), 2,4-diaminophenoxyethanol, 2,6-bis(2'-hydroxyethylamino)toluene, 3-amino-2-chloro-6-methylphenyl, 5-amino-4-chloro-2-methylphenol, 2,4-dichloro-3-aminophenol, 3,5-diamino-2,6-dimethoxypyridine, 5-methylresorcinol, 2,5-dimethylresorcinol, 3,4-methylenedioxyphenol, 3,4-methylenedioxyaniline, N-(2-hydroxyethyl)-3,4-methylenedioxyaniline and any mixtures thereof.

5. The agent as claimed in any of claims 1 to 4, characterized in that the compounds of component B are present in an amount of, in each case, from 0.03 to 65 mmol, in particular from 1 to 40 mmol, in each case based on 100 g of the total dyeing agent.

6. The agent as claimed in any of claims 1 to 5, characterized in that at least one activated

carbonyl compound chosen from the group consisting of isatin, 5-chloroisatin, 5-bromoisatin, 6-bromoisatin, 5-nitroisatin, N-hydroxymethylisatin, N-allylisatin, 5-isatinsulfonic acid Na salt, glutaconaldehyde tetrabutylammonium salt, tribase aldehyde, malonaldehyde bis(dimethyl acetal), 4-hydroxy-3-methoxycinnanaldehyde, 1-piperidinomethylisatin, 1-diethylaminomethylisatin, glutaconaldehyde Na salt, 5-N-methylanilinopentadienyl, 2-chloro-3-hydroxymethylene-1-cyclohexene 1-aldehyde, N-(5-anilino-2,4-pentanedien-1-ylidene)anilinium chloride, trans-β-(2-furyl)-acrolein, 2-nitro-1,3-indanedione, dehydroascorbic acid, 2-acetyl-1,3-cyclohexanedione, 7-dimethylamino-2,4,6-heptatrienylidene dimethylammonium perchlorate and 4-formyl-1-methylpyridinium benzenesulfonate.

7. The agent as claimed in any of claims 1 to 6, characterized in that one or more compounds chosen from 5,6-dihydroxyindole and its N-substituted C_1-C_4-alkyl and C_1-C_4-hydroxyalkyl derivatives, 5,6-dihydroxyindoline and its N-substituted C_1-C_4-alkyl and C_1-C_4-hydroxyalkyl derivatives and the compounds known as developers, chosen from the group consisting of p-phenylenediamine, p-tolylenediamine, p-aminophenol, 4,4'-diaminodiphenylamine, 1,10-bis(2,5-diaminophenyl)-1,4,7,10-tetraoxydecane, 2,(2'-hydroxyethyl)-p-phenylenediamine, 2,6-dichloro-4-aminophenol, N,N-bis(2'-hydroxyethyl)-p-phenylenediamine, 3-methyl-4-aminophenol, 2-aminomethyl-4-aminophenol, 5-aminosalicylic acid, bis(2-hydroxy-5-aminophenyl)methane, 2-(2,5-diaminophenoxy)ethanol are also added.

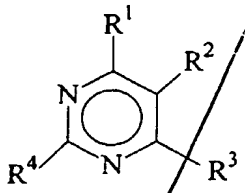
8. The agent as claimed in any of claims 1 to 7, characterized in that it comprises anionic, zwitterionic or nonionic surfactants.

9. The agent as claimed in any of claims 1 to 8, characterized in that it is an air-oxidizable dyeing system.

10. The agent as claimed in any of claims 1 to 8, characterized in that [lacuna] comprises oxidizing agents chosen from the group H_2O_2, peroxydisulfate and percarbonate.

11. The agent as claimed in any of claims 1 to 8, characterized in that it is an enzymatic dyeing system.

12. The use of a combination of
A) at least one pyrimidine derivative of the general formula I



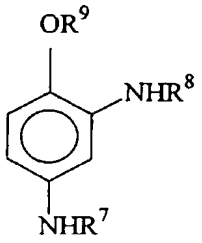
(I)

in which R^1, R^2, R^3 and R^4 may be identical or different and are hydrogen, OH, NH_2 or a group NR^5R^6, in which R^5 and R^6 may be identical or different and are C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl having a primary and/or secondary hydroxyl group,
where two of the radicals R^1, R^2, R^3 or R^4 together can form an optionally substituted 5- and 6-membered heterocycle containing one or two

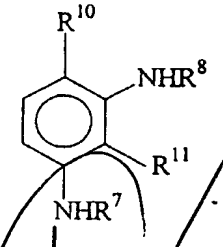
nitrogen and/or oxygen atom(s) in the molecule,
with the proviso that at least two of the radicals R^1, R^2, R^3 or R^4 are a group NH_2 and/or NR^5R^6,

B) at least one compound chosen from the group consisting of

(a) m-phenylene derivatives of the formulae II and III



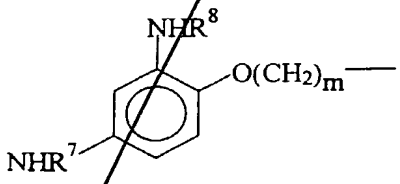
(II)



(III)

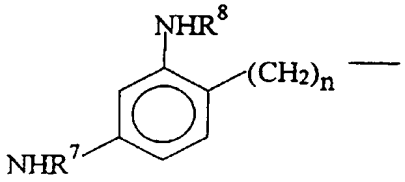
(II) (III)

in which R^7 and R^8 may be identical or different and are hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,
R^9 is C_1-C_4-hydroxyalkyl or a radical of the general formula IV



(IV)

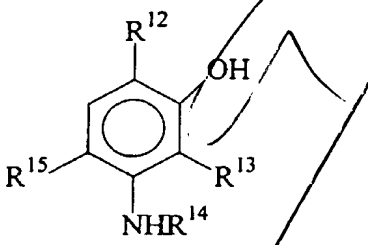
in which R^7 and R^8 are as defined above and m is an integer from 1 to 4,
R^{10} is hydrogen or a radical of the general formula V



(V)

in which R^7 and R^8 are as defined above and n is an integer from 1 to 4,
R^{11} is hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

(b) m-aminophenol derivatives

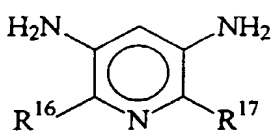


(VI)

in which R^{12} is hydrogen or C_1-C_4-alkyl,
R^{13} is hydrogen, fluorine, chlorine, OCH_3 or C_1-C_4-alkyl,
R^{14} is hydrogen, C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl or OCF_3,
R^{15} is hydrogen, fluorine, chlorine or OCH_3,

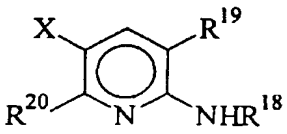
with the provisos that R^{12}, R^{13}, R^{14} and R^{15} are not hydrogen at the same time and that, if R^{12} is methyl, R^{13}, R^{14} and R^{15} are not hydrogen at the same time,

(c) pyridine derivatives of the formulae VII and VIII



(VII)

in which R^{16} and R^{17} may be identical or different and are fluorine, chlorine or OCH_3,

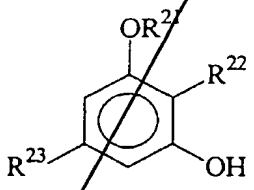


(VIII)

in which R^{18} is hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,
R^{19} is OH or NH_2,
R^{20} is hydrogen, C_1-C_4-alkoxy or NH_2,
X is hydrogen or OCH_3,

with the provisos that, if R^{19} is NH_2, R^{18} and R^{20} are not C_1-C_4-alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX

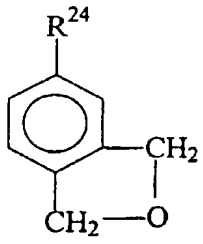


(IX)

in which R^{21}, R^{22} and R^{23} may be identical or different and are hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

with the provisos that R^{21}, R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

(e) methylenedioxybenzene derivatives of the formula X



(X)

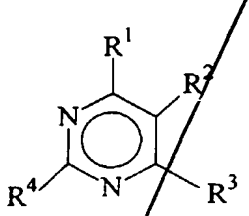
in which R^{24} is OH, NH_2 or NHR^{25}, in which R^{25} is C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl, and

(f) 3,4-diaminobenzoic acid,

for dyeing keratin fibers.

13. A method of dyeing keratin fibers, in particular human hair, in which a dyeing agent comprising

A) at least one pyrimidine derivative of the general formula I



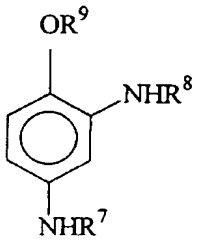
(I)

in which R^1, R^2, R^3 and R^4 may be identical or different and are hydrogen, OH, NH_2 or a group NR^5R^6, in which R^5 and R^6 may be identical or different and are C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl having a primary and/or secondary hydroxyl group,
where two of the radicals R^1, R^2, R^3 or R^4 together can form an optionally substituted 5- and 6-membered

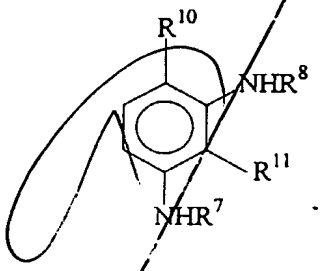
heterocycle containing one or two nitrogen and/or oxygen atom(s) in the molecule,
with the proviso that at least two of the radicals R^1, R^2, R^3 or R^4 are a group NH_2 and/or NR^5R^6,

B) at least one compound chosen from the group consisting of

(a) m-phenylene derivatives of the formulae II and III



(II)



(III)

in which

R^7 and R^8 may be identical or different and are hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,

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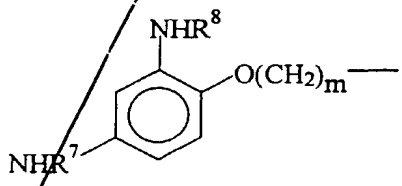
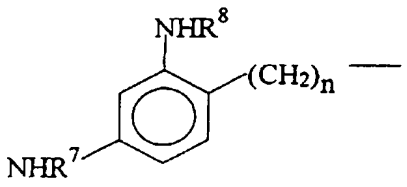


(IV)

in which

R^7 and R^8 are as defined above and m is an integer from 1 to 4,

R^{10} is hydrogen or a radical of the general formula V



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in which
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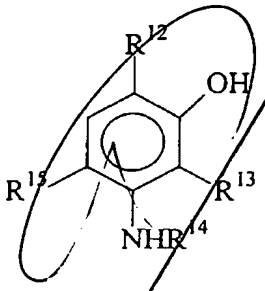
(b) m-aminophenol derivatives



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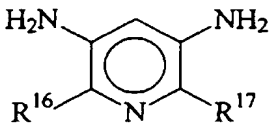
in which
R^{12} is hydrogen or C_1-C_4-alkyl,
R^{13} is hydrogen, fluorine, chlorine, OCH_3 or C_1-C_4-alkyl,
R^{14} is hydrogen, C_1-C_4-alkyl, C_1-C_4-hydroxyalkyl or OCF_3,
R^{15} is hydrogen, fluorine, chlorine or OCH_3,
with the provisos that R^{12}, R^{13}, R^{14} and R^{15} are not hydrogen at the same time and that, if R^{12} is methyl, R^{13}, R^{14} and R^{15} are not hydrogen at the same time,

(c) pyridine derivatives of the formulae VII and VIII



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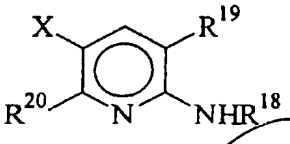

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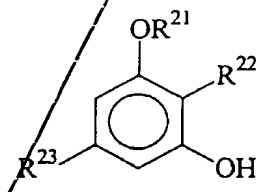
in which R^{18} is hydrogen, C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl,
R^{19} is OH or NH_2,
R^{20} is hydrogen, C_1-C_4-alkoxy or NH_2,
X is hydrogen or OCH_3,
with the provisos that, if R^{19} is NH_2, R^{18} and R^{20} are not C_1-C_4-alkyl or methoxy respectively at the same time, and if R^{18} is hydrogen, R^{19} and R^{20} are not OH or hydrogen respectively at the same time,

(d) resorcinol derivatives of the formula IX



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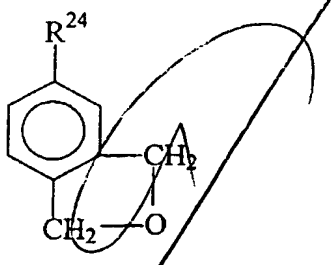
with the provisos that R^{21}, R^{22} and R^{23} are not hydrogen at the same time, if R^{21} and R^{23} are

hydrogen, R^{22} is not methyl, and if R^{21} is methyl, R^{22} and R^{23} are not hydrogen at the same time,

(e) methylenedioxybenzene derivatives of the formula X



(X)

in which

R^{24} is OH, NH_2 or NHR^{25}, in which R^{25} is C_1-C_4-alkyl or C_1-C_4-hydroxyalkyl, and

(f) 3,4-diaminobenzoic acid,

and customary cosmetic ingredients, is applied to the keratin fibers, left on the fibers for a while, usually about 30 minutes, and then rinsed out again or washed out using a shampoo.